

IN THE CLAIMS

Claim 1 has been amended as follows:

1. (Currently amended) A monochromator for use with an X-ray radiator that emits X-rays having a spectral composition, said monochromator comprising:

a crystal having a property of spectrally restricting X-rays interacting therewith to a spectral range having a spectral composition, said spectral range encompassing multiple energies and exceeding a spectral range provided by Bragg's relation from single crystal lattice; and
a positioning device connected to said crystal to move said crystal relative to the X-rays emitted by said X-ray radiator to change the said spectral composition of the X-rays.

2. (Original) A monochromator as claimed in claim 1 wherein said positioning device moves said crystal to alter an angle between at least a portion of said X-rays and said crystal.

3. (Original) A monochromator as claimed in claim 1 wherein said positioning device moves said crystal into and out of a path of said X-rays.

4. (Original) A monochromator as claimed in claim 1 comprising a control device connected to said positioning device for automatically controlling said positioning device to control movement of said crystal.

Claim 5 has been amended as follows:

5. (Currently amended) A monochromator as claimed in claim 4 wherein said crystal spectrally restricts said X-rays to produce spectrally restricted X-rays, having an spectral range comprises a restricted range energy spectrum with a

maximum value, and wherein said control device ~~allows setting of sets~~ said maximum value and controls said positioning device dependent on the maximum value that has been set.

Claim 6 has been amended as follows:

6. (Currently amended) A monochromator as claimed in claim 4 wherein said X-rays emitted by said X-ray radiator have an emitted energy spectrum with a first maximum value, and wherein said crystal spectrally restricts said X-rays emitted by said X-ray radiator to produce ~~spectrally restricted X-rays having an spectrally restricted~~ energy spectrum with a second maximum value, and wherein said control device ~~allows setting of sets~~ a factor between said first maximum value and said second maximum value and controls said positioning device dependent on said factor that has been set.

Claim 7 has been amended as follows:

7. (Currently amended) A monochromator as claimed in claim 6 wherein said control device ~~allows setting of sets~~ said factor in a range between 0.3 and 0.8.

Claim 8 has been amended as follows:

8. (Currently amended) A monochromator for use with an X-ray radiator that emits X-rays having a spectral composition, said X-ray radiator having an operating voltage associated therewith, said monochromator comprising:
a crystal having a property of spectrally restricting X-rays interacting therewith to a spectral range having a spectral composition, said spectral range encompassing multiple energies and exceeding a spectral range provided by Bragg's relation from single crystal lattice;

a positioning device connected to said crystal to move said crystal relative to the X-rays emitted by said X-ray radiator to change the said spectral composition of the X-rays; and

a control device connected to said positioning device for automatically controlling said positioning device to control movement of said crystal dependent on said operating voltage.

Claim 9 has been amended as follows:

9. (Currently amended) An X-ray device comprising:

an X-ray radiator that emits X-rays having a spectral composition; and

a monochromator comprising a crystal having a property of spectrally restricting X-rays interacting therewith to a spectral range having a spectral composition, said spectral range encompassing multiple energies and exceeding a spectral range provided by Bragg's relation from single crystal lattice, and a positioning device connected to said crystal to move said crystal relative to the X-rays emitted by said X-ray radiator to change the said spectral composition of the X-rays.

10. (Original) An X-ray device as claimed in claim 9 wherein said positioning device moves said crystal to alter an angle between at least a portion of said X-rays and said crystal.

11. (Original) An X-ray device as claimed in claim 9 wherein said positioning device moves said crystal into and out of a path of said X-rays.

12. (Original) An X-ray device as claimed in claim 9 comprising a control device connected to said positioning device for automatically controlling said positioning device to control movement of said crystal.

Claim 13 has been amended as follows:

13. (Currently amended) An X-ray device as claimed in claim 12 wherein said crystal spectrally restricts said X-rays to produce spectrally restricted X-rays, having an spectral range comprises a restricted range energy spectrum with a maximum value, and wherein said control device ~~allows setting of sets~~ said maximum value and controls said positioning device dependent on the maximum value that has been set.

Claim 14 has been amended as follows:

14. (Currently amended) An X-ray device as claimed in claim 13 wherein said X-rays emitted by said X-ray radiator have an emitted energy spectrum with a first maximum value, and wherein said crystal spectrally restricts said X-rays emitted by said X-ray radiator to produce spectrally restricted X-rays having an energy spectrum with a second maximum value, and wherein said control device allows setting of a factor between said first maximum value and said second maximum value and controls said positioning device dependent on said factor that has been set.

Claim 15 has been amended as follows:

15. (Currently amended) An X-ray device as claimed in claim 14 wherein said control device ~~allows setting of sets~~ said factor in a range between 0.3 and 0.8.

16. An X-ray device comprising:

an X-ray radiator that emits X-rays having a spectral composition, said X-ray radiator having an operating voltage associated therewith; and

a monochromator comprising a crystal having a property of spectrally restricting X-rays interacting therewith to a spectral range having a spectral composition, said spectral range encompassing multiple energies and exceeding a spectral range provided by Bragg's relation from single crystal lattice, a positioning device connected to said crystal to move said crystal relative to the X-rays emitted by said X-ray radiator to change the said spectral composition of the X-rays, and a control device connected to said positioning device for automatically controlling said positioning device to control movement of said crystal dependent on said operating voltage.